Review of: "Assessing students' attitudes and perceptions towards statistical literacy in a university system in a developing African country"

Tatjana Hrubik-Vulanović[1]

1 Kent State University

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This is a well-written paper about the Introductory Statistics course that is a required course in the 1st or 2nd year of college for many majors. It aligns with the findings of the research previously done, which indicates that students experience "fear, stress, anxiety, and antipathy towards statistics" due to "the perceived difficulty and numerical complexity of statistics, a naturally low statistics self-efficacy and self-perception, and the extremely varying statistics cognitive capabilities…".Also, "Inadequate supporting and facilitating conditions such as modern Information Communication Technology infrastructure, and a conducive teaching and learning environment lead to low performances."

The fact that similar conclusions are reached at different colleges, despite different types of delivery and different technical capabilities, indicates that the problem is pervasive, important to address, and may have additional factors to consider.

The authors may consider the **course content** as another factor that affects students' attitudes and perceptions.

Calls for a **fundamental change in the curriculum of Introductory Statistics** have existed for many years. The paper written by Cobb (2015) initiated a very informative discussion that can be found at:
https://nhorton.people.amherst.edu/mererenovation/

In their discussion, Fisher and Bailer state: "From our perspective, our introductory courses serve three distinct clientele: all students (think the general public), statistical doers (majors requiring skills with data and analysis—the sciences), and proto-statisticians (those majoring in statistics, mathematics, or computer science or who may get an advanced degree in the area)."

Unfortunately, the traditional Introductory Statistics course typically includes too much mathematics and introduces too many statistical terms and concepts, which makes it hard for the largest group of students (the general public) and contributes to their negative attitudes toward the course. Flattening mathematics requirements and developing the "grammar of statistics," which would limit the number of statistical terms and concepts, were mentioned in the discussion. These two changes may improve both student performance and their attitudes towards the course.

In recent years, Data Science seems like a great prerequisite for Introductory Statistics as students already learn about data and how to manipulate it before they take a statistics class.

Reference:

George Cobb (2015) Mere Renovation is Too Little Too Late: We Need to Rethink our Undergraduate Curriculum from the Ground Up, The American Statistician, 69:4, 266-282, DOI: 10.1080/00031305.2015.1093029 Whole paper can be downloaded from: at: https://arxiv.org/abs/1507.05346?context=stat.OT